Oxytetracycline-medicated feed – UMESC Research

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USGS

Target Animal Safety

- Objective
  - Determine safety of oxytetracycline-medicated feed fed at a rate of 82.5 mg/kg bodyweight/day for 10 consecutive days to cool- and warmwater fish.
- Methods
  - Assess feed consumption, toxicity, gross pathology, and histologic change in walleye, yellow perch, and hybrid striped bass.
  - Dosed at 0, 82.5, 248, and 413 mg/kg bodyweight per day for 10 (yellow perch and hybrid striped bass) or 20 consecutive days (walleye).

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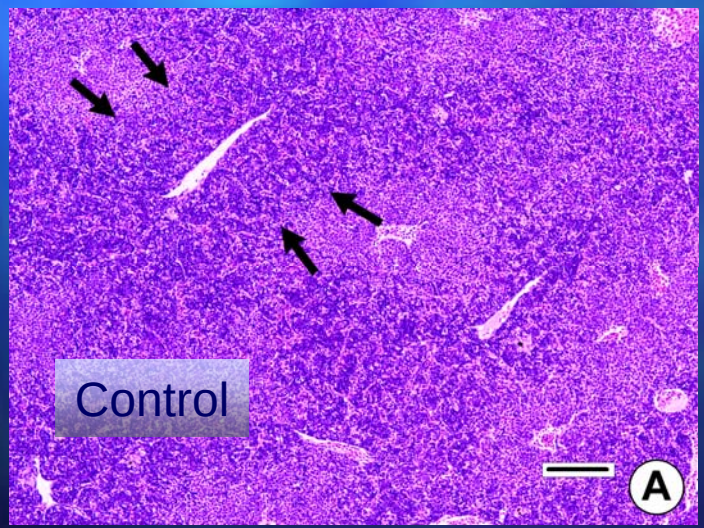
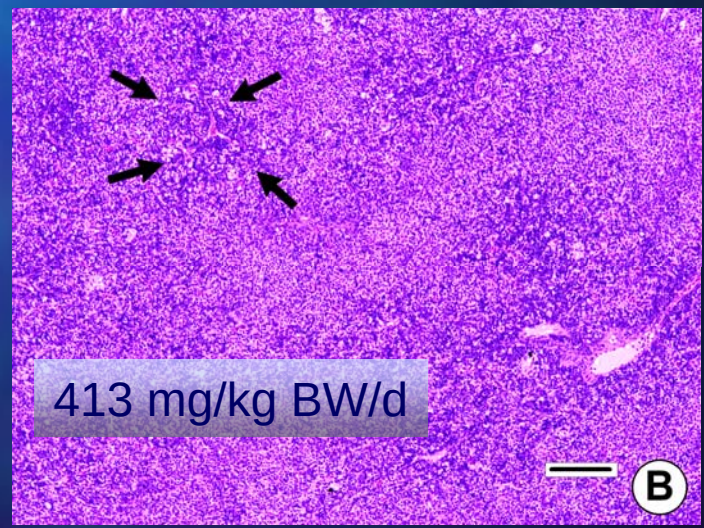
Target Animal Safety

- No mortality
- Hybrid striped bass growth was reduced at high dose
- Histopathological findings





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Target Animal Safety

- FDA review
  - Report submitted February 19, 2003
  - Accepted December 19, 2003
  - Completed Target Animal Safety technical section for all freshwater-reared cool- and warmwater finfish.

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Environmental Assessment

- WASP-6 model developed to predict oxytetracycline discharge following medicated feed use at fish hatcheries
  - most OTC binds to sediments or other suspended particles
  - relatively low solubilized OTC concentrations
- Model estimates of solubilized OTC applied to OTC INAD 9332 use data to estimate discharge concentrations.

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Environmental Assessment

- Literature review complete
  - New use pattern – INAD data
  - Fate – published sorption, degradation, decomposition, and sedimentation data
  - Effects – published toxicity studies
  - Risk assessment – comparison of available effects data to estimated discharge concentrations (water solubilized only)
- Peer-reviews received July 2004

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Environmental Assessment

- Model validation will be initiated in FY05 pending
  - Method development for solubilized and sediment-bound OTC
  - In progress at UMESC and UW-Madison (sediment)

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